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Enterprise Architecture Migration Planning Using the Matrix of Change

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Abstract

The authors discuss applicability of the theory of complementary assets in Enterprise Architecture migration planning area. They propose an approach to planning of transition to the target Enterprise Architecture. The approach is based on the Matrix of Change – the only tool of change management allowing consideration and efficient use of interactions between existing and implemented practices in an enterprise.

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1. Introduction

The core of EA is about development of a plan for usage of IT-resources by business-processes, as well as the scope of management principles allowing expression of business's strategy through IT [3]. Having emerged as an approach to the description of the information systems architecture, Enterprise Architecture (EA) has developed into a subject, operating with the models at the level of an organization, a group of companies and a state. As E. Zinder notes in his article [1], today more managers and analysts start experiencing the need of a comprehensive description and development planning of their organization. They need it at least to know what is their company itself in reality, to maintain the rational order of its structure, and then to start its systematic development or transformation considering all significant conditions.

One of shortcomings of existing EA frameworks is weak formalization of the processes of migration from a baseline EA to the target one (EA migration). The majority of guidebooks on EA limit themselves with listing

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of factors, which should be considered in planning of EA migration, but do not describe the way it can be done in practice. A corresponding issue is raised, for example, in [2]. Individual EA methodologies describe in a pretty formal way the data which are needed for migration planning, however do not include methods and tools allowing developing a plan that would consider interactions of existing architecture elements and architecture elements to be implemented.

2. EA migration planning and dependences consideration

In [4] the following is noted: “for the purposes of description of architectures there are many various methods and their variations, differing in the grouping of the notions under consideration. In order to arrange the order of activities to be performed special methods are suggested – for example, TOGAF ADM. It seems that development of an architecture in such conditions would be a simple, repeated and routine process. In reality, one very important link is omitted in these stipulations: organizations and their systems are unique, and the process of architecture designing should be creative when it is necessary”. This conclusion relates to formation of a target EA, as well as planning of corresponding, often quite widescale changes (EA migration planning).

In the book “How to Manage the Enterprise Architecture Practice” [5] the author describes a general approach to planning of such changes: “The changes needed to transform from the current state of the enterprise to the goals and condition expressed by the future Enterprise Architecture cannot be achieved in a single quantum step. Evolving the enterprise from its baseline to the future Enterprise Architecture needs multiple concurrent independent activities and incremental builds. The best way to understand and control this complex evolutionary process is by developing and maintaining a system migration roadmap or transformation plan”. Such a general description is characteristic for many other sources. However, concrete methods of planning of these large-scale changes remain to be mostly “behind the curtains” of existing methodologies.

The authors of the paper studied the most developed modern and obsolete EA methodologies (such as Zachman Framework, FEAF, TOGAF, GERAM, EAP) and came to a conclusion that all of them contain no or poor EA migration planning methods.

Dedicated and business-literature in the area of EA generally contains review descriptions of methods, approaches to modeling, discusses various aspects of architecture application, difficulties of interaction with the persons involved. But such literature still gives little attention to the planning of transition to the target architecture and does not suggest new (in comparison with EA methods) approaches.

Thus, the analysis of existing methodologies of EA and respective dedicated literature shows that description of the target architecture implementation (migration) planning is represented as a rule by general recommendations and enumeration of factors, which should be considered in the process of migration planning. By this the need of consideration of various dependences (or interactions) is recognized as one of the most significant factors of architecture migration planning. However there are no strict enough methods enabling efficient use of this fact in practice.

3. The approach to change planning based on the theory of complementary assets

The need to consider interconnections during change planning in the enterprise is confirmed by multiple studies. In particular, yet in 1992 they were the central subject-matter of the study of the theory of complementary assets of P. Milgrom and J. Roberts [6].

According to [6] complementarity leads to formation of predictable relations between individual types of activity. Relations of complementarity between changes of technology, demand as well as the structure and scales of an enterprise for the entire XX century kept on creating positive relation between them. By this Milgrom and Roberts give the following definition of complementarity: “Assets or activities are mutually

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